

REMARKS

Claims 12 and 20 have been canceled. Claims 1, 2, 11, 13, 19 and 25-26 have been amended. Claims 1-11, 13-19, 25 and 26 are pending in this application.

The Applicant thanks the Examiner for courtesies extended during the phone interview of May 11, 2007. A copy of the interview summary is attached. The Applicant and the Examiner discussed the placement of the force transmitting layer in the outer wall of the mouthguard, and how this layer of long fibers distributes an applied force before the force reaches the teeth. The Applicant has amended claims 1 and 13 to more explicitly state this feature, which was already in the claims. The Applicant respectfully submits that a new search is not necessary since the claims originally claimed distributing the force through the force transmitting layer.

Claims 25-26 were rejected under 35 U.S.C. §112 as being indefinite. The claims have been amended to more distinctly describe the arch as having a left side and a right side, and each side has a first molar tooth. In addition, one skilled in the art of dentistry would know and understand that humans have 4 sets of molars, and that the molar closest to the medial line of the face is universally referred to as the first molar.

Claims 1-20 and 25-26 were rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 3,943,924 to Kallestad. The Applicant respectfully traverses this rejection.

U.S. Patent No. 3,943,924 to Kallestad discloses a mouthguard that includes two layers 5, 7 of a flexible, shock-absorbing material. The mudguard also includes an arcuate shaped insert disposed between the layers, so that it is located adjacent the lingual surface of at least the central incisors and preferably adjacent at least the hard palate portion of the upper mouth. (Column 2, lines 17-26). Kallestad does not disclose that the force-transmitting layer is positioned in the

outer wall of the mouthguard, so as to cover the front surface of the teeth and to transmit an applied force longitudinally across the buccal surface of the teeth, as disclosed by the Applicant.

In contradistinction, claim 1 discloses a mouthguard to protect an arch of a user that includes an outer wall covering a buccal surface of teeth in the arch of the user. The outer wall includes a force absorbing inner layer, a force absorbing outer layer and a force-transmitting layer positioned therebetween a portion of the force absorbing inner layer and a portion of the force absorbing outer layer. The force-transmitting layer is a generally planar rectangular strip and includes a predetermined arrangement of longitudinally extending fibers bonded together. An inner wall is positioned opposite the outer wall, and covers a palatal surface of teeth in the arch of the user. The inner wall includes only the force absorbing inner layer and the force absorbing outer layer. A lower wall connects the outer wall and the inner wall, and covers an occlusal surface of teeth in the arch of the user. The lower wall includes only the force absorbing inner layer and the force absorbing outer layer. The outer wall, inner wall and lower wall form a U-shaped channel that is molded in the shape of the arch of the user. A force applied to the arch is absorbed by the force absorbing outer layer of the outer wall and distributed along the longitudinally extending fibers in the force transmitting layer of the outer wall adjacent only the buccal surface of the teeth, to reduce the applied force before the applied force is transmitted through the arch of the user. Claim 13 is similar and includes additional limitations.

Kallestad '924 does not teach or suggest the mouthguard taught by the present invention. Kallestad '924 merely discloses that the outer wall of the mouthguard includes two shock-absorbing layers. Kallestad '924 does not disclose that the outer wall includes a force-transmitting layer that is a rectangular strip of longitudinally extending fibers disposed between the two shock absorbing layers, as disclosed by the Applicant.

Kallestad '924 merely discloses the inclusion of a force transmitting layer that is arcuate in shape and located adjacent the lingual surface of at least the central incisors and preferably adjacent at least the hard palate portion of the upper mouth (column 2, lines 21-26 and FIGS. 5 and 6). Kallestad clearly states that the force-transmitting layer is located to provide a rigid backing support for the upper front teeth and at least a portion of the palate. Kallestad further uses an analogy to describe the function of the force-transmitting layer as bracing the tooth from behind. (Column 1, lines 48-68). Kallestad simply does not disclose that the force transmitting layer is a rectangular strip of longitudinally extending fibers bonded together, as disclosed by the Applicant. Kallestad absolutely does not disclose that the force transmitting layer is located in the front wall of the mouthguard adjacent only the buccal surface of the teeth, in order to distribute an applied force along the longitudinally extending fibers to reduce the applied force before the force is transmitted through the teeth, as taught by the Applicant.

The Examiner states that it would have been obvious to one of ordinary skill in the art at the time of the invention to move the force-transmitting layer to the buccal side of the mouthpiece, since it has been held that "rearranging parts of an invention only involves routine skill in the art, citing *In re Japikse*, 86 USPQ 70.

The Examiner has incorrectly applied a select portion of *In re Japikse*. The MPEP with respect to the rearrangement of parts is reproduced below:

MPEP 2144.04(VI)(C) Rearrangement of Parts

In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.); *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design

choice). **However, "The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device."** *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984).

The Applicant respectfully submits that *In re Japikse* holds that the rearranging of parts of an invention only involve routine skill in the art **if the operation of the device remains the same**. Clearly, the operation of the Applicant's invention is not the same as the mouthguard of Kallestad '924. In the present invention, upon the application of a force to the mouth, the force is partially absorbed by the outer wall **and** then partially distributed over the longitudinally extending fibers that make up the force transmitting layer, and then partially absorbed before coming into contact with the teeth. Any remaining forces are absorbed by the inner wall of the mouthguard. As a result of the operation of the Applicant's invention, the force is absorbed and distributed **BEFORE** coming into contact with any of the teeth. Kallestad operates in a totally different manner, wherein a force applied to the teeth is partially absorbed by the outer wall, and then partially transmitted through the teeth. The force reached the inner wall, where it is partially absorbed, and then finally distributed across the back side of the teeth and across the palate, and then absorbed. Thus, in the present application, the force is distributed before even coming into contact with the teeth. In Kallestad, the force contacts the teeth (doing damage) and then is distributed across the teeth and the soft palate. Kallestad clearly teaches away from the present invention, since it teaches that the force-transmitting layer is used to provide a brace behind the tooth.

The MPEP further states that "the mere fact that the parts could be rearranged does not support a finding of obviousness without some motivation or reason to do so absent the teachings

of Applicant's specification to make the necessary changes in the reference device." See *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984).

Further, in *In re Fitch*, 972, F.2d 1260, 1266, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992), it was held that "the mere fact that the prior art could be modified as proposed by the examiner is not sufficient to establish a prima facie case of obviousness." As stated by the Federal circuit in *In re Ochiai*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995), "reliance on per se rules of obviousness is legally incorrect and must cease." As further stated in *Fitch*, "to set forth a prima facie case of obviousness the examiner must establish that the applied prior art itself would have fairly suggested, to one of ordinary skill in the art, the desirability of the examiner's proposed modification of the prior art." See *Fitch*, 972, F.2d at 1266, 24 USPQ2d at 1783-84. The Examiner has not provided any reason to rearrange the walls of the mouthguard, based on the teachings of Kallestad or that the force transmitting layer is made of longitudinally extending fibers.

Most recently, the Supreme Court reaffirmed the *Graham* factors for determining obviousness under Section 103(a) in *KSR International Co. v Teleflex*, No. 04-1350, 550 U.S. _____ (2007), including determining the scope and contents of the prior art, ascertaining the differences between the prior art and the claims at issue, resolving the level of ordinary skill in the art, and evaluating evidence of secondary consideration.

Concurrent with this response, the Applicant is submitting an affidavit describing the skill level of the art, and the way in which the invention has advanced the knowledge in the art by providing an improved mouthguard that is safer due to the placement and physical properties of the novel force transmitting layer, and easier to use due to the placement and properties of the novel force transmitting layer. The Applicant has met the *Graham* burden. The Examiner has

simply not supplied the requisite motivation or reason to modify the position, shape or material of the force transmitting layer of Kallestad, based on the teachings of Kallestad. As previously stated, Kallestad teaches away from the present invention since the semi-circular shaped force transmitting layer located in the inner wall of the mouthguard behind the teeth and a portion of the soft palate, is intended to serve as a brace behind the tooth.

Therefore, Applicant respectfully submits that claim 1 and the claims dependent therefrom are in a condition for allowance, which allowance is solicited.

Based on the above, Applicant submits that the claims are in a condition for allowance, which allowance is respectfully solicited. If the Examiner finds to the contrary, it is respectfully requested that the undersigned in charge of this application be called at the telephone number given below to resolve any remaining issues.

Dated: May 22, 2007

Respectfully submitted,

By /BeverlyMBunting/

Beverly M. Bunting

Registration No.: 36,072

GIFFORD, KRASS, SPRINKLE, ANDERSON
& CITKOWSKI, P.C.

2701 Troy Center Drive, Suite 330

Post Office Box 7021

Troy, Michigan 48007-7021

(248) 647-6000

(248) 647-5210 (Fax)

Attorney for Applicant

Interview Summary	Application No.	Applicant(s)	
	10/749,891	FOLEY, TIMOTHY W.	
	Examiner	Art Unit	
	Brandon Jackson	3772	

All participants (applicant, applicant's representative, PTO personnel):

- (1) Brandon Jackson (3) Beverly Bunting
 (2) Michael Brown (4) _____

Date of Interview: 11 May 2007.

Type: a) ☒ Telephonic b) ☐ Video Conference
 c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.

If Yes, brief description: _____

Claim(s) discussed: 1.

Identification of prior art discussed: Kallestad et al. (US Patent 3,943,924).

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant believes the long resinous fibers matrix of the force trasmitting layer being on the front of the teeth would place the case in condition for allowance. However, this limtiation would raise a new issue that will not be considered after final.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.


 Examiner's signature, if required